Online-Journals.org

iJIM International Journal of Interactive Mobile Technologies

iJIM | eISSN: 1865-7923 | Vol. 19 No. 1 (2025) | OPEN ACCESS

https://doi.org/10.3991/ijim.v19i01.51427

PAPER

Measuring the Effects of Mobile and Social Networking Technology on the Enhancement of English Language Skills: A Comparative Study

Sohaib Alam(✉)

College of Sciences and Humanities, Prince Sattam Bin Abdulaziz University, AlKharj, Kingdom of Saudi Arabia

s.alam@psau.edu.sa

ABSTRACT

This study investigates the effectiveness of mobile learning and teaching technologies and social networking platforms in enhancing English language skills among students in senior secondary public schools in India. Given the rising interest in these educational tools, their impact on language skill development remains underexplored. Addressing this gap, the study employed an experimental design with 120 randomly selected participants divided into three groups. For 12 weeks, each group received English language instruction through different mediums: mobile learning technology (Google Classroom), a social media application (WeChat), and a traditional multimedia projection system. The findings indicate a significant improvement in the English language proficiency of students who used mobile learning technology, as opposed to those who engaged with social media tools or traditional methods. This highlights the potential of mobile learning technologies in effectively enhancing language learning outcomes in the educational context. Furthermore, the traditional multimedia methods employed were found to be less effective in fostering language proficiency when compared to the employment of Google Classroom and WeChat. Given the results of this study, it is proposed that future research endeavors investigate the potential impact of severe games on language learning outcomes. In addition, it is advised that future investigations focus on creating and integrating demanding games that aim to enhance students' proficiency in the English language.

KEYWORDS

mixed-mode, language skills, m-learning, pedagogy, multimedia communication

1 INTRODUCTION

The rapid integration of digital technologies in education has revolutionized traditional learning paradigms, offering opportunities for enhancing language learning. Mobile learning technologies (MLT) and social networking platforms, notably Google Classroom and WeChat, have emerged as potent tools for facilitating English

Alam, S. (2025). Measuring the Effects of Mobile and Social Networking Technology on the Enhancement of English Language Skills: A Comparative Study. *International Journal of Interactive Mobile Technologies (iJIM)*, 19(1), pp. 79–92. https://doi.org/10.3991/ijim.v19i01.51427

Article submitted 2024-07-28. Revision uploaded 2024-10-14. Final acceptance 2024-10-24.

language learning [1], [2], [3]. These platforms have been praised for their accessibility, flexibility, and interactive capabilities, which align well with the modern educational challenges of accuracy and adaptability [4], [5].

Traditional methods of teaching English, while having their place, often do not capture the full potential of contemporary digital innovations that provide interactive, accessible, and tailor-made learning experiences [5]. The rise of mobile learning technologies is a testament to this evolution. These tools stand out for their portability and accessibility, allowing learners to engage with language learning materials at their convenience, aligning perfectly with the demands of a fast-paced, mobile-centric lifestyle. Social media platforms have also become crucial in this educational transformation [6]. They offer vibrant and interactive spaces that do more than facilitate language practice; they immerse learners in authentic language environments, exposing them to the practical use of English in real-world scenarios [7]. This immersion experience is of great value, as it bridges the depth between theoretical understanding of language and practical language proficiency. Incorporating these advanced digital tools into strategies for learning English represents a significant step forward. It represents a change towards more efficient, captivating, and personalized educational experiences that align with the evolving needs of learners in the present digital age. This approach modernizes language education and ensures learners possess the necessary abilities to navigate and thrive in our increasingly interconnected global society.

Despite these advancements, there is a critical need for empirical evidence to substantiate the actual impacts of these tools compared to traditional multimedia projection systems, particularly in terms of improving English language skills [8], [9]. This study seeks to address this gap by providing a comprehensive evaluation of the effectiveness of these digital tools in a controlled educational setting. The necessity of this study is driven by the ongoing debate over the best practices for technology integration in language learning and the lack of consensus on the most effective methods to enhance language proficiency.

This study will contribute to the broader discourse on optimizing language teaching and learning practices in the digital era, offering insights into the practical applications and limitations of mobile and social networking technologies in educational contexts [10]. By evaluating the comparative effectiveness of Google Classroom, WeChat, and traditional methods, this study will provide valuable data that can inform future pedagogical strategies, ensuring that educational practices keep pace with technological advancements and evolving learner language learning needs [11], [12], [13], [14], [15], [16], [17].

2 LITERATURE REVIEW

2.1 Effect of Google Classroom on English language skills

A series of studies have highlighted the diverse impacts of Google Classroom on English language learning and teaching. Initially, Hwang and Hwang [1] shed light on the early integration of web-based platforms in language learning, particularly emphasizing self-regulated and flipped classroom approaches. This was followed by Triana [2], who demonstrated the effectiveness of flipped instruction, facilitated by Google Classroom, in enhancing student engagement in high school English. In 2017, Sun et al. [9] expanded the discourse to encompass the function of digital

platforms in cultivating English-speaking proficiency, with particular emphasis on mobile social networking. A noteworthy comparative investigation conducted by Syakur [8] assessed the efficacy of Google Classroom in terms of traditional teaching methods in ESL/EFL contexts, thereby providing valuable insights into its effectiveness and limitations. Al-Maroof and Al-Emran [18] observed enhancements in specific language competencies, such as reading comprehension and vocabulary, among IT students utilizing Google Classroom. Furthermore, Zheng, Warschauer and Chang [19] underscored the advantages of collaborative learning in one-to-one laptop environments, which is applicable to using Google Classroom. Anuar and Khairuddin [20] deliberated on the role of Google Classroom in blended learning approaches, while Purcell [21] focused on its influence on student writing and teacher-student interaction. The role of ICT, including Google Classroom, in diverse educational settings was examined by Babu and MA [22]. The pandemic era saw an adaptation to remote teaching, with Google Classroom playing a crucial role, as Whalen [23] analyzed. Finally, Ertmer and Ottenbreit-Leftwich [4] discussed the broader implications of digital tools such as Google Classroom on teachers' professional development in language teaching. Collectively, these studies paint a comprehensive picture of the evolving role of Google Classroom in English language education.

2.2 Effect of WeChat on English language skills

WeChat's role in enhancing English language proficiency is extensively documented in various studies, highlighting its multifunctional capabilities in language education. The platform's real-time communication feature significantly contributes to improving English skills. Studies by Yao [3] and Zhang and Zheng [24] demonstrate how regular interaction in English on WeChat enhances English language skills. The abundance of educational content available on WeChat, including diverse language learning materials, has been shown to facilitate vocabulary expansion and grammar improvement [25], [26].

The social aspect of WeChat, encompassing group interactions and communities, creates an immersive learning environment. As explored in a study by Farver et al. [27], this aspect of learning improves language skills and provides cultural insights, which are crucial for comprehensive language learning. The immediate feedback and peer support available through WeChat are highlighted as instrumental in refining language proficiency [28]. Further research by Huang [29] has shown that WeChat aids in improving specific language skills such as reading comprehension and writing. Its integration into formal education settings, complementing traditional teaching methods, is noted for its effectiveness [30]. Additionally, using WeChat for collaborative language projects, as explored by Xi et al. [31], provided insights into how group tasks on social media can enhance language skills. Moreover, research by Altam [32] emphasizes the role of WeChat in developing listening and speaking skills through its audiovisual features.

Collectively, these studies affirm WeChat's effectiveness as a comprehensive tool for English language learning. While it offers practical language use, cultural exposure, and a wide array of educational resources, its success as a language-learning tool depends on careful integration with formal education and awareness of its limitations. WeChat's diverse functionalities and interactivity make it a valuable addition to the repertoire of modern language learning strategies.

The research hypothesis posits that mobile learning technologies and social media tools may be superior in enhancing English language skills compared to conventional teaching methods. The study's objective is to conduct a comprehensive empirical analysis to assess and compare the impacts of various technological tools on the skills of English language improvement. This analysis primarily explores the efficacy of mobile learning technology, represented by Google Classroom and social media tools, focusing on WeChat, compared to traditional multimedia projecting systems. Based on the purpose of this study, the main research question is composed.

- How do MLT Google Classroom, WeChat, and traditional multimedia projection systems differ in their effectiveness for enhancing English language skills among senior secondary students?

3 METHODOLOGY

3.1 Participants

Data were obtained from undergraduate students in Saudi Arabia during the academic year of 2023. The illustration of participants, which was chosen randomly, consisted of 120 students. The customary age of the participants was 21.39 years old, with a standard deviation of 1.37. The gender distribution among the participants was 64% male and 36% female. Furthermore, they were randomly assigned to three groups: Group A = 40 participants, Group B = 40 participants, and Group C = 40 participants. Group A received treatment through Google Classroom, Group B received treatment through WeChat, and Group C received treatment through traditional pedagogy, specifically a multimedia projecting system. To facilitate the study, the researcher went through significant difficulties, such as participants were mildly familiar with MLT and its use for educational purposes. Time constraint was another hurdle that has to be considered a challenge for the present study.

3.2 Research procedure

The study was initiated by implementing three different modes of instruction, namely Google Classroom, WeChat, and a multimedia projecting system, to facilitate English teaching for 12 weeks. Ahead of the program's commencement, the participants were obliged to complete a pre-test to evaluate their overall English proficiency. The intention of this preliminary investigation was twofold: first, to guarantee that the three groups were initially on par in terms of their command of the English language, and second, to assess the participants' foundational level of English proficiency at the beginning of the program. The assessment of participants' general English skills was conducted using Longman's TOEFL English language proficiency examination, which consisted of three distinct sections: listening comprehension (30 questions), reading comprehension (30 questions), and structure and written expression (40 questions).

The training program commenced for the three groups following the pre-test measuring the students' general English proficiency. Time management was the major challenge faced by the researcher during the research.

3.3 Google classroom

In the quest to enhance students' English skills in listening, reading, and writing, we embraced a multi-faceted approach with Google Classroom at its core, emphasizing structure and interactive learning. We meticulously organized the classroom into distinct sections for each skill, ensuring ease of access and a coherent learning journey. To bolster listening skills, we integrated a variety of audio resources such as podcasts, audio stories, and recorded lectures, coupled with comprehension tasks and summarization exercises. Live sessions via Google Meet enriched the experience, exposing students to diverse accents and speaking styles. For reading proficiency, we utilized a range of texts, including news articles and short stories, supplemented by comprehension questions and vocabulary activities, and deepened engagement through weekly book club discussions. Writing skills were honed through diverse exercises, encompassing creative writing and structured essays, with personalized feedback provided on Google Classroom, focusing on grammar, vocabulary, coherence, and style. The inclusion of peer review sessions further fostered collaborative learning and a comprehensive feedback loop. This integrative, interactive approach significantly enriched the learning experience, fostering substantial improvements in all targeted language skills.

The intervention encompassed continuous assessments through quizzes, assignments, and listening tests administered on Google Classroom. These assessments offered valuable feedback to students and enabled us to adapt our teaching strategies to their evolving needs, thus fostering an effective and responsive learning environment.

3.4 WeChat

This strategy employed for enhancing students' English language skills involved the utilization of WeChat, employing its distinctive characteristics within a comprehensive treatment approach.

The initial step involved the establishment of specific WeChat groups for each class. These groups served as the central platform for sharing resources, discussions, and management of activities. Clear guidelines were put in place to promote effective learning.

To cultivate listening skills, we introduced audio messages and English-language podcasts within the WeChat groups, encompassing a range of conversational clips to more intricate materials. Following each audio post, tasks such as question-answer exercises, summaries, or group discussions on key points were implemented to enhance listening comprehension. In order to strengthen reading abilities, diverse English reading materials, including articles and short stories tailored to different reading levels and interests, were shared. After reading, students were encouraged to engage in discussions, express their opinions, or complete comprehension questions, thereby enriching their reading comprehension and critical thinking capabilities. Various writing prompts were provided to enhance writing skills, encompassing creative storytelling to opinion pieces. Students submitted their written work within the WeChat group or privately, facilitating peer reviews and receiving personalized feedback on grammar, vocabulary, and style.

Interactive challenges and quizzes were periodically organized through WeChat, encompassing vocabulary games, grammar quizzes, and exercises for sentence

formation, often accompanied by small motivational rewards. Additionally, we closely monitored the participation and progress of each student, offering personalized feedback to highlight areas for improvement and foster continuous practice.

3.5 Multimedia projecting systems

The methodology to improve English language skills in students involved the innovative use of a multimedia projecting system, aiming to harness multimedia technology for a dynamic and engaging learning environment.

For listening skills enhancement, we utilized the system to present diverse English audio-visual materials such as short films, documentaries, and news clips, exposing students to various accents and vocabularies. Post-viewing, interactive exercises such as word gap-filling, comprehension questions, and group discussions were conducted, reinforcing listening comprehension and analytical skills. In developing reading skills, e-book reading sessions were held using the projector, facilitating group reading and discussing texts displayed on a large screen. This was complemented by interactive vocabulary exercises, including word games and quizzes, to build vocabulary. Critical analysis and discussions post-reading sessions furthered comprehension and analytical abilities. For writing skills improvement, we organized writing workshops where students created essays and reports using the projection system to display writing prompts and editing tools. Peer review sessions involved projecting students' written work for group feedback, enhancing learning through collective insights.

Additionally, interactive grammar and style exercises were presented using multimedia tools, making learning visually stimulating and engaging. The multimedia projecting system was central throughout this treatment, providing a platform for displaying rich content and facilitating interactive activities. Its visual and audio capabilities were pivotal in creating an immersive experience, vital for enhancing English listening, reading, and writing skills. This multimedia approach was balanced with traditional teaching methods and regular assessments to monitor and evaluate student progress effectively.

Upon completing the training program, all participants underwent a post-test to assess their general English proficiency. This evaluation and the pre-test administered at the program's onset comprised standard Longman English language proficiency tests. Notably, different versions of the Longman test were utilized for the pre-test and post-test to mitigate the potential for recall bias among the students. Such a measure ensured that participants would not remember specific content from the pre-test, thus maintaining the integrity of the assessment process. Both tests were designed to possess equivalent difficulty levels, adhering to the established standards of the Longman proficiency test. To further ensure uniformity in the assessment conditions, the pre-test and post-test were conducted in a classroom setting, providing a consistent testing atmosphere for all participants.

Given that both the pre- and post-tests consisted exclusively of objective questions, primarily in the format of multiple-choice queries, these assessments were evaluated objectively through answer sheets. The pre- and post-tests scoring was quantified on a scale ranging from 0 to 100, allowing for a standardized measure of participants' performance. This scale facilitated a clear, quantifiable comparison of proficiency levels before and after the training program.

3.6 Analysis of data

The data analysis for this study was performed using SPSS version 25.0, which was selected for its robust statistical capabilities in handling complex social science data. The process began with a one-way analysis of variance (ANOVA) to ensure that no pre-existing differences in English proficiency existed among the groups at the start of the program. This was followed by a correlational analysis to examine the relationship between pre- and post-test scores, ensuring the consistency of the measures used across the study's timeline. The primary analytical method used was a repeated measures one-way ANOVA (RM-ANOVA), which allowed for the evaluation of changes in English proficiency over time while controlling for initial proficiency levels. This approach facilitated a detailed analysis of the interventions' impact by accounting for individual variations and maintaining a balanced comparison across the different educational interventions.

4 RESULTS OF THE STUDY

Table 1. Score of participants across groups and tests

	Google Classroom Group			WeChat Group			Multimedia Projecting System Group		
	Pre-test	Post-test	Gain	Pre-test	Post-test	Gain	Pre-test	Post-test	Gain
Mean	41.3	52.7	11.4	40.7	47.8	7.1	40	44.9	4.9
SD	1.19	1.83	.64	1.57	2.21	.64	1.39	1.51	.12

A one-way ANOVA was conducted to evaluate differences between unrelated samples. The statistical analysis aimed to determine if there were significant disparities in English language proficiency among three distinct groups at the commencement of the program. According to the results of this analysis, the effect attributable to the group factor was found to be not statistically significant, as indicated by the F-value of 0.174 with an associated probability value (p-value) of .735, $F(2, 137) = 0.174$, $p = .735$. This outcome suggests no meaningful differences in English language proficiency among the three groups at the beginning of the program, as presented in Table 1. Consequently, this led to the assumption that at the program's onset, the three groups possessed a comparable overall command of English language skills. This fundamental similarity in language proficiency is crucial for guaranteeing that any observed progress or changes in language skills during the program can be ascribed to the program's interventions rather than pre-existing disparities among the groups.

Also, a complete statistical assessment was executed on the individual pre-test and post-test scores of all 120 participants. This thorough examination focused on elucidating the relationship between these ratings, resulting in a correlation coefficient (r) of .849 accompanied by a highly significant p-value ($p < .001$). The presence of such a substantial correlation coefficient prompted further statistical scrutiny. Consequently, a repeated measures one-way analysis of variance (RM-ANOVA) was employed. This analysis possessed a particularly refined approach, as it entailed matching participants across the three groups based on their initial pre-test scores, thereby ensuring a balanced and equitable comparison.

The repeated measures one-way ANOVA was employed to assess the statistical significance of the variations in post-test scores between the three participant groups. This analysis showed a significant main effect of the group variable, indicated by an F-value of 7.83 and a p-value of .04, with a partial eta squared (η^2p) of .640, F (2, 137) = 7.83 (p = .04, η^2p = .640). The main effect signifies that the differences in post-test scores among the groups were not merely due to chance but were statistically significant.

Moreover, the use of RM-ANOVA entailed further comprehensive concern, revealing that the effect of group connection on the scores after the test was extremely statistically significant. This can be seen through the substantial F-value of 51.08 and a p-value less than .001. This indicates that the impact of the assigned groups on the transformations observed in the participants' post-test performance is noteworthy, highlighting the significance of group differences in determining post-test results.

4.1 Comparative analysis of groups

A comprehensive evaluation was conducted with great attention to detail, retrospectively evaluating the comparative efficacy of three educational interventions: Google Classroom, WeChat, and the multimedia project. This analytical procedure revolved around a comprehensive examination of the average improvements attained by participants from the initial pre-test to the subsequent post-test using each of these approaches. The Google Classroom approach emerged as the most efficacious, displaying the most remarkable average improvement at 11.4. This significant figure underscores that participants engaged in the Google Classroom intervention experienced the most substantial average improvement in their scores, moving from the pre-test to the post-test phase.

In contrast, the WeChat method displayed a mean gain of 7.1, while the multimedia project exhibited a mean gain of 4.9. These results, when juxtaposed with those of Google Classroom, indicate that, although there were improvements in participant scores in both the WeChat and multimedia Project groups, these improvements were less pronounced than those observed in the Google Classroom group. Consequently, these findings lead to the inference that, on an average scale, participants involved in the Google Classroom intervention achieved the most notable advancements in their scores compared to their counterparts in the WeChat and multimedia project groups. This comprehensive analysis, therefore, highlights the superior efficacy of the Google Classroom method in elevating participant performance throughout the intervention, as evidenced by the quantifiable gains in test scores.

5 DISCUSSIONS

The study's findings demonstrate significant differences in the effectiveness of three educational interventions: Google Classroom, WeChat, and the multimedia projecting system in enhancing English language proficiency among participants. Initial analyses confirmed that there were no pre-existing disparities in language skills among the groups, ensuring that any subsequent gains could be attributed directly to the interventions. Comparative evaluations showed that the Google Classroom group experienced the most substantial improvements in language proficiency. In contrast, the gains observed in the WeChat and multimedia Projecting System groups, while positive, were less pronounced. This outcome highlights the superior efficacy of

the Google Classroom intervention in achieving notable advancements in language skills, confirming its potential as a powerful tool in language education. The findings suggest that the effective integration of digital learning environments such as Google Classroom can significantly enhance educational outcomes compared to traditional or less interactive digital platforms. Research on mobile-based social media addiction surged over the last five years, shifting focus from smartphone addiction to social media's complex interplay with individual, social, and environmental factors. Effective social media usage via mobile requires balanced online engagement, parental guidance, emotional intelligence, and healthy social norms [33].

The current study's findings advocate integrating diverse learning modalities consistent with prior research [34], [35], [36], [37]. The synergistic combination of face-to-face, online, and self-paced learning approaches has enriched learning experiences, elevated learning outcomes, and strengthened student engagement [38], [39]. In this context, Google Classroom emerged as an effective tool, seamlessly integrating face-to-face instruction with online resources and self-directed learning elements. Conversely, the use of WeChat in educational settings appeared to dilute the efficacy of face-to-face instruction by enabling students to engage via their mobile devices, potentially detracting from direct teacher-student interactions. Additionally, the deployment of traditional multimedia projection systems may have inadvertently hindered self-directed learning by compelling students to adhere strictly to the teacher's pace, thereby limiting their autonomy in the learning process. Consequently, it is logical to observe that student engagement and learning outcomes facilitated through Google Classroom are significantly superior to those achieved via WeChat. Furthermore, the engagement and outcomes of WeChat usage surpass those attained through traditional multimedia projection systems. This hierarchy in the efficacy of different educational tools underscores the critical role of technology in shaping contemporary learning environments.

Incorporating experiential learning through platforms such as Google Classroom and WeChat may have enhanced students' English language skills. Experiential learning, characterized by student engagement in direct experiences and the construction of knowledge, has been identified as a potent approach to augmenting student learning experiences [40]. In the context of the Google Classroom-assisted environment, students were afforded opportunities to engage actively with the material, such as responding verbally via an audio recorder, accessing PowerPoint slides directly, and participating in polls related to questions posed by the teacher. This format likely provided a rich experiential learning environment, thereby facilitating an improvement in their learning.

In contrast, the WeChat-assisted class may not have offered the same level of experiential learning as Google Classroom. The difference in the depth and breadth of experiential learning opportunities between these platforms could account for the varying degrees of effectiveness in language skill enhancement observed among students. Additionally, compared to WeChat, the traditional multimedia projecting system appeared even less effective in providing experiential learning opportunities. This disparity in the provision of experiential learning experiences across the different platforms likely provides a basis for accepting the research hypotheses, which suggest varying levels of effectiveness in language skill enhancement attributable to the different educational technologies employed.

A collaboration-oriented rationale may also support the hypothesis's acceptance. As Alioon and Delialioglu [41] have noted, genuine collaborative mobile learning activities can significantly enhance students' English language learning. One of the notable features of Google Classroom, as highlighted by Yu [42], is its

robust capacity to facilitate collaboration. Within this platform, students can signal their content comprehension by clicking on a specific slide, allowing teachers to gauge understanding and promptly adjust the teaching pace. Additionally, Google Classroom enables students to actively engage in the learning process by leaving messages, sending barrages, and directly collaborating with peers, while teachers can respond to student inquiries within the same platform.

Collaboration is further extended on the WeChat platform, accessible to all participants involved in the educational process. It enables a continuous and dynamic interaction between students and teachers. In contrast, traditional multimedia projection systems, such as Rain Classroom, do not offer the same level of dynamic, collaborative platforms as Google Classroom and WeChat. This lack of interactive capabilities in traditional systems could further justify the acceptance of the research hypotheses, emphasizing the pivotal role of collaborative and interactive technologies in enhancing language learning.

6 CONCLUSION

The study indicates that specialized mobile learning technologies have a significant positive impact on English learning outcomes. Google Classroom, in particular, proves to be more effective than social media tools such as WeChat, which are also utilized for educational purposes but with less success. The study also notes that traditional instructional tools, such as multimedia projection systems, do not adequately enhance student learning outcomes. Unlike Google Classroom and WeChat, these conventional tools lack the same level of engagement and interactive learning experience, which are essential in educational settings. This evident difference in effectiveness between mobile learning technologies and traditional tools highlights the importance of dedicated, mobile-based educational technologies in modern educational settings. These technologies offer tailored, flexible, and accessible learning solutions better suited to meet the needs of contemporary students and educational standards. Furthermore, the study demonstrates the superior efficacy of specialized mobile learning technologies such as Google Classroom over traditional and social media-based educational tools, highlighting their significant impact on enhancing English learning outcomes. It contributes to the academic field by providing empirical support for integrating advanced digital tools into educational strategies for more effective learning.

7 LIMITATIONS AND FUTURE RECOMMENDATIONS

This investigation specifically chose Google Classroom to represent mobile learning technologies and WeChat as an example of social media tools, which may not encompass the diversity of other educational aids. Future research could broaden the scope by including a more comprehensive array of learning assistants. Additionally, given the study's exclusive focus on EFL contexts, the applicability of its findings to different educational environments remains uncertain, suggesting a need for cautious generalization beyond this specific setting.

Future research endeavors might benefit from creating severe games to enhance student learning outcomes. This approach could be efficient in applying virtual platforms and their technologies in educational contexts. The integration of gamification strategies in learning platforms can significantly improve the learning of English.

The complexity and multifaceted nature of serious game development necessitate an interdisciplinary approach. The intricacies in designing these educational tools extend beyond the scope of a single discipline, highlighting the need for collaborative efforts across various fields of study.

8 ACKNOWLEDGEMENT

"This study is supported via funding from Prince Sattam Bin Abdulaziz University project number (PSAU/2025/R/1446)."

9 REFERENCES

[1] G. J. Hwang, C. L. Lai, and S. Y. Wang, "Seamless flipped learning: A mobile technology-enhanced flipped classroom with effective learning strategies," *Journal of Computers in Education*, vol. 2, pp. 449–473, 2015. https://doi.org/10.1007/s40692-015-0043-0

[2] M. Triana, H. Herman, B. Sinurat, and D. E. Silalahi, "An analysis of students perception on the use of google classroom in english language learning," *Cetta: Jurnal Ilmu Pendidikan*, vol. 4, no. 3, pp. 607–618, 2021. https://doi.org/10.37329/cetta.v4i3.1474

[3] T. Yao, "A communicative English-speaking supplementary curriculum: Using WeChat to develop Chinese EFL learners' speaking fluency," Master's Projects and Capstones, 919, 2019. https://repository.usfca.edu/capstone/919

[4] P. A. Ertmer and A. T. Ottenbreit-Leftwich, "Teacher technology change: How knowledge, confidence, beliefs, and culture intersect," *Journal of research on Technology in Education*, vol. 42, no. 3, pp. 255–284, 2010. https://doi.org/10.1080/15391523.2010.10782551

[5] B. L. Moorhouse and K. M. Wong, "Blending asynchronous and synchronous digital technologies and instructional approaches to facilitate remote learning," *Journal of Computers in Education*, vol. 9, pp. 51–70, 2022. https://doi.org/10.1007/s40692-021-00195-8

[6] T. Poell and J. Van Dijck, "Social media and new protest movements," in *The SAGE Handbook of Social Media*, 2018, pp. 546–561. https://doi.org/10.4135/9781473984066.n31

[7] T. Vandeyar, "The academic turn: Social media in higher education," *Education and Information Technologies*, vol. 25, pp. 5617–5635, 2020. https://doi.org/10.1007/s10639-020-10240-1

[8] A. Syakur, "The effectiveness of English learning media through google classroom in Higher Education," *Britain International of Linguistics, Arts and Education (BIoLAE) Journal*, vol. 2, no. 1, pp. 475–483, 2020. https://doi.org/10.33258/biolae.v2i1.218

[9] Z. Sun, C. H. Lin, J. You, H. jiao Shen, S. Qi, and L. Luo, "Improving the English-speaking skills of young learners through mobile social networking," *Computer Assisted Language Learning*, vol. 30, nos. 3–4, pp. 304–324, 2017. https://doi.org/10.1080/09588221.2017.1308384

[10] K. Georgouli, I. Skalkidis, and P. Guerreiro, "A framework for adopting LMS to introduce e-learning in a traditional course," *Journal of Educational Technology & Society*, vol. 11, no. 2, pp. 227–240, 2008.

[11] S. Alam, A. Hameed, A. Kobylarek, M. Madej, and F. Ahmad, "Drama approaches across higher education in the English curriculum: Students perspectives on holistic activity-based teaching," *XLinguae*, vol. 16, no. 2, pp. 54–68, 2023. https://doi.org/10.18355/XL.2023.16.02.05

[12] S. Alam, A. Hameed, M. Madej, and A. Kobylarek, "Perception and practice of using Artificial Intelligence in education: An opinion based study," *XLinguae,* vol. 17, no. 1, pp. 216–233, 2024. https://doi.org/10.18355/XL.2024.17.01.15

[13] S. Alam, M. Madej, W. Wardha, and A. Kobylarek, "Utilizing process drama in education: A study of pedagogical perceptions," *XLinguae,* vol. 17, no. 2, pp. 132–149, 2024. https://doi.org/10.18355/XL.2024.17.02.09

[14] S. Alam, M. Usama, Md Moshabbir Alam, I. Jabeen, and F. Ahmad, "Artificial intelligence in global world: A case study of grammarly as E-tool on ESL learners' of Darul Uloom Nadwa," *International Journal of Information and Education Technology (IJIET),* vol. 13, no. 11, pp. 1741–1747, 2023. https://doi.org/10.18178/ijiet.2023.13.11.1984

[15] S. Alam, M. Usama, A. Hameed, and S. Iliyas, "Analysing Facebook mobile usage: efficacy and ESL learners' writing proficiency," *International Journal of Interactive Mobile Technologies (iJIM),* vol. 18, no. 3, pp. 60–74, 2024. https://doi.org/10.3991/ijim.v18i03.44959

[16] M. Usama, S. Alam, A. Hameed, F. Ahmad, and S. Iliyas, "Web-Based vs. mixed mode instruction utilizing e-learning via LMS: A comparative study," *International Journal of Information and Education Technology (IJIET),* vol. 14, no. 4, pp. 612–619, 2024. https://doi.org/10.18178/ijiet.2024.14.4.2084

[17] S. Alam, F. Ahmad, and Y. Nickolaeva Biryukova, "Incorporating artificial intelligence and MALL strategies in EFL classrooms: Interactive pedagogical praxis," *Journal of Education Culture and Society*, vol. 15, no. 1, pp. 181–198, 2024. https://doi.org/10.15503/jecs2024.1.181.198

[18] R. A. Al-Maroof and M. Al-Emran, "Research trends in flipped classroom: A systematic review," in *Recent Advances in Intelligent Systems and Smart Applications, Studies in Systems, Decision and Control*, M. Al-Emran, K. Shaalan, and A. Hassanien, Eds., Springer, Cham, vol. 295, 2021, pp. 253–275. https://doi.org/10.1007/978-3-030-47411-9_15

[19] B. Zheng, M. Warschauer, C. H. Lin, and C. Chang, "Learning in one-to-one laptop environments: A meta-analysis and research synthesis," *Review of Educational Research*, vol. 86, no. 4, pp. 1052–1084, 2016. https://doi.org/10.3102/0034654316628645

[20] A. Anuar Adam and Z. Khairuddin, "Google classroom as a tool for blended learning," *International Journal of Modern Languages and Applied Linguistics (IJMAL),* vol. 5, no. 1, pp. 1–13, 2021.

[21] K. Purcell, J. Buchanan, and L. Friedrich, "The impact of digital tools on student writing and how writing is taught in schools," Washington, DC: Pew Research Center, vol. 16, 2013.

[22] G. S. Babu and K. S. MA, "Role of Information and Communication Technology (ICT) in higher education: A study," *International Journal of Multidisciplinary Education and Research*, vol. 9, no. 5, pp. 103–109, 2018.

[23] J. Whalen, "Should teachers be trained in emergency remote teaching? Lessons learned from the COVID-19 pandemic," *Journal of Technology and Teacher Education*, vol. 28, no. 2, pp. 189–199, 2020.

[24] J. Zhang and X. Zheng, "Study on the application of WeChat in college English listening and speaking course," in *2018 Seventh International Conference of Educational Innovation through Technology (EITT)*, 2018, pp. 220–224. https://doi.org/10.1109/EITT.2018.00051

[25] C. F. Pamintuan, D. G. Mallari, N. T. Garcia, J. P. Galang, and R. M. B. Buduan, "The use of WeChat application on CFL learners'," *Vocabulary Acquisition. TESOL International Journal*, vol. 13, no. 4, pp. 26–38, 2018.

[26] H. Duan, X. Wei, and Y. Li, "Effects of WeChat on english as L2 mobile learning and teaching," in *Computer Science and Education, ICCSE 2022, Communications in Computer and Information Science*, W. Hong and Y. Weng, Eds., Springer, Singapore, vol. 1813, 2023, pp. 423–437. https://doi.org/10.1007/978-981-99-2449-3_37

[27] J. A. M. Farver, C. J. Lonigan, and S. Eppe, "Effective early literacy skill development for young Spanish-speaking English language learners: An experimental study of two methods," *Child Development*, vol. 80, no. 3, pp. 703–719, 2009. https://doi.org/10.1111/j.1467-8624.2009.01292.x

[28] H. Wang and P. Crosthwaite, "The affordances of WeChat Voice Messaging for Chinese EFL learners during private tutoring," *Computer Assisted Language Learning*, vol. 22, no. 1, pp. 223–245, 2021.

[29] X. Huang, "WeChat-based teaching for an immersion cultural exchange program – a case study in CFL," *Smart Learning Environments*, vol. 6, 2019. https://doi.org/10.1186/s40561-019-0087-0

[30] P. C. Suppiah, K. Kaur, N. Arumugam, and M. Idham, "Social media in ESL classroom: WeChat," *International Journal of Academic Research in Business and Social Sciences*, vol. 12, no. 8, pp. 967–982, 2022. https://doi.org/10.6007/IJARBSS/v12-i8/14667

[31] K. Xi, Y. Nie, N. Yang, C. Cai, and A. Zhang, "The WeChat mini-program for oral English evaluation based on the smart listening algorithm," in *Cognitive Computing – ICCC 2021, ICCC 2021,* in Lecture Notes in Computer Science, R. Xu, C. Cai, and L. J. Zhang, Eds., Springer, Cham, vol. 12992, 2022, pp. 55–62. https://doi.org/10.1007/978-3-030-96419-1_6

[32] S. Altam, "Influence of social media on EFL yemeni learners in indian universities during covid-19 pandemic," *Linguistics and Culture Review*, vol. 4, no. 1, pp. 35–47, 2020. https://doi.org/10.21744/lingcure.v4n1.19

[33] T. Tülübaş, T. Karakose, and S. Papadakis, "A holistic investigation of the relationship between digital addiction and academic achievement among students," *European Journal of Investigation in Health, Psychology and Education*, vol. 13, no. 10, pp. 2006–2034, 2023. https://doi.org/10.3390/ejihpe13100143

[34] N. A. Alzahrani and M. A. Abdullah, "Student engagement effectiveness in e-learning system," *Biosc. Biotech. Res. Comm.*, vol. 12, no. 1, 2019. https://doi.org/10.21786/bbrc/12.1/24

[35] M. Meyliana, A. N. Hidayanto, and E. K. Budiardjo, "Evaluation of social media channel preference for student engagement improvement in universities using entropy and TOPSIS method," *Journal of Industrial Engineering and Management*, vol. 8, no. 5, pp. 1676–1697, 2015. https://doi.org/10.3926/jiem.1652

[36] N. J. Morris, H. Christie, and J. Barber, "It's one of the first times I've felt fully engaged: Developing student engagement using blogging as a form of assessment," *Journal of Geography in Higher Education*, vol. 43, no. 3, pp. 343–361, 2019. https://doi.org/10.1080/03098265.2019.1612862

[37] E. Norton, Y. Li, L. R. Mason, and R. A. Washington-Allen, "Assessing the impact of a geospatial data collection app on student engagement in environmental education," *Education Sciences*, vol. 9, no. 2, p. 118, 2019. https://doi.org/10.3390/educsci9020118

[38] D. R. Serrano, M. A. Dea-Ayuela, E. Gonzalez-Burgos, A. Serrano-Gil, and A. Lalatsa, "Technology-enhanced learning in higher education: How to enhance student engagement through blended learning," *European Journal of Education*, vol. 54, no. 2, pp. 273–286, 2019. https://doi.org/10.1111/ejed.12330

[39] S. Alam, "Efficacy of mixed model instruction to improve English language skills of business management students: An experimental study," *Journal of Education Culture and Society*, vol. 15, no. 2, pp. 387–402, 2024. https://doi.org/10.15503/jecs2024.2.387.402

[40] H. Li, A. Öchsner, and W. Hall, "Application of experiential learning to improve student engagement and experience in a mechanical engineering course," *European Journal of Engineering Education*, vol. 44, no. 3, pp. 283–293, 2019. https://doi.org/10.1080/03043797.2017.1402864

[41] Y. Alioon and O. Delialioğlu, "The effect of authentic m-learning activities on student engagement and motivation," *British Journal of Educational Technology*, vol. 50, no. 2, pp. 655–668, 2019. https://doi.org/10.1111/bjet.12559

[42] Z. Yu and H. Yi, "Acceptance and effectiveness of rain classroom in linguistics classes," *International Journal of Mobile and Blended Learning (IJMBL),* vol. 12, no. 2, pp. 77–90, 2020. https://doi.org/10.4018/IJMBL.2020040105

10 AUTHOR

Dr. Sohaib Alam is working as an Assistant Professor of English at the Department of English, College of Science and Humanities, Prince Sattam Bin Abdulaziz University, Kingdom of Saudi Arabia. He holds a Ph.D. in English Language Teaching (ELT) from Aligarh Muslim University, India and also CELTA certified by Cambridge. His areas of interest are Applied Linguistics, Pragmatics, Teaching Methods, Blended Learning, and Pedagogic Theory. He has presented papers at both national and international conferences, published research articles and papers in Scopus and Web of Science indexed journals. He has been teaching English for over 5 years (E-mail: s.alam@psau.edu.sa).